



- 10 mg Marlhoro Menthol
- Selective filtration
- Cost reduction
- New products.
- Selective delivery by rod

PHYSICAL CHEMISTRY OF SMOKE AND FILTRATION - 0105 Staff of nine

Personnel Training: Physical chemistry, kinetics .

Objective: Determine how filters function adequately so that selective filtration systems can be developed. Establish how cigarette smoke and cigarette rod characteristics are related adequately to permit new cigarette products to be designed prior to their fabrication. Determine basic mechanism for filler expansion. Determine feasibility of expanding filler with water.

Program:

- 1. Selective filtration (Goal
- 3 & 5) Gas chromatography + sorption kinetics, filter freespace characterization
 - Radiotracer analysis displacement at filter surface
 - Particle size effects + composition variation with particle size
- (Goal 1, 2. Smoke - rod mathematical relationships + cigarette 5 & 6) modelling
- 3. Smoke flavor and tar fractionation + low tar normal (Geal 1) flavor cigarette
- 4. Filler expansion basic mechanics [Improved ET position
- f [and production upscaling 5. Expansion of filler with water

Items (4) and (5) are covered by one Research Professional, full time, plus a technician on loan from the Development Department.

Dr. H. A. Hartung, Senior Professional
Mr. J. F. Bebbs, Assistant Professional
Dr. J. C. Crump, Research Professional
Dr. S. Debrand, Research Professional
Mr. R. W. Dayer, Assistant Professional
Mrs. Ruth Hale, Technician
Mr. J. S. Osborne, Research Professional
Mr. D. L. Simpson, Research Professional
Mr. L. L. Stewart, Associate Professional Project Leader:

Mr. L. L. Stewart, Associate Professional Dr. D. T. Sawyer, Consultant - \$500 Dr. J. C. Schug, Consultant - \$500

Goals:

- 10 mg Marlboro
- Menthol
- Selective filtration
- Cost reduction
- New products
- Selective delivery by rod.

TO ME MALIBOTO Menthol cigarette

New products Selective delivery

Personnel Training:

Program: (Goal 1)

(Goal 1)

(Goal I) (Goal 1)

(Goal 2)

(Goal 2)

(Goal 6)

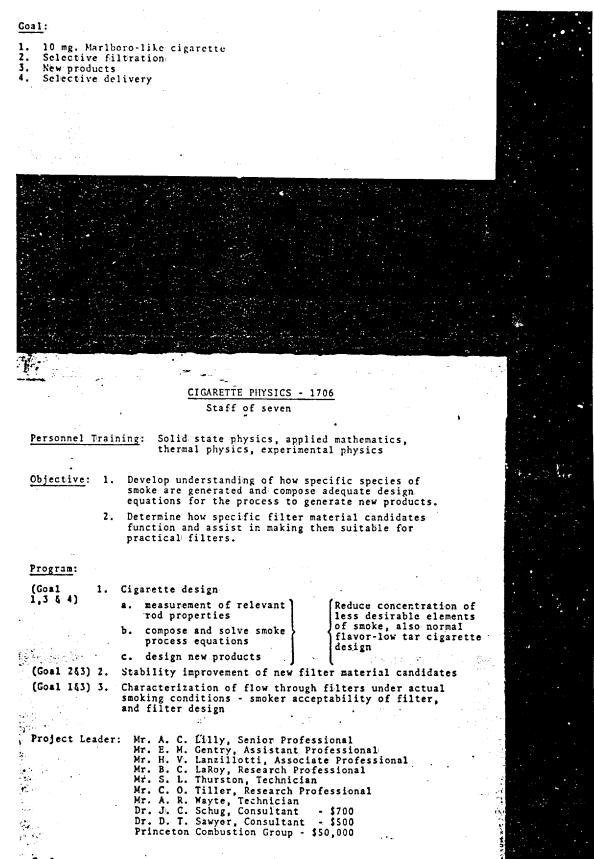
Goals:

Project Leader:

10 mg Marlboro

New products

Processing cost reduction



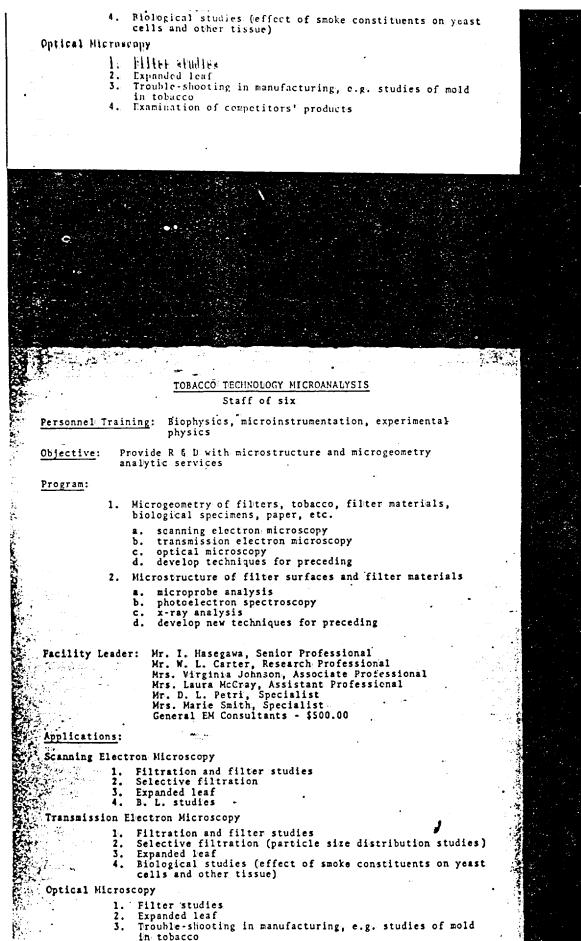
GOSI:

1. 10 mg. Marlboro-like cigarette

2. Selective filtration

3. New products

4. Selective delivery



4. Examination of competitors' products

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TOBACCO TECHNOLOGY MICROANALYSIS (Con't) Applications: (Con't) Microprobe Analysis Filtration studies (different composition as a function of particle size) (Analysis of deposition on filter and of filter surface) X-Ray Analysis 1. Selective filters (structure of catalysts in filters and selective absorbents) 2. Expanded leaf studies, e.g. ammonium carbonate studies **ESCA** Filtration studies

 Different composition as a function of particle size
 Composition of deposition on filter surface, also question of whether chemisorption is occurring



Staff of four

Personnel Training: Electronics

Objective: Maintain electronic instrumentation in R & D

and design and fabricate new instrumentation

as required.

Program:

Service equipment on request.
 Routinely test and recalibrate certain instruments.
 Develop new designs for instrumentation on request.
 Learn new electronic techniques when feasible.

Facility Leader: Mr. A. C. Lilly, Senior Professional
Mr. W. L. Jones, Assistant Professional
Mr. L. C. Bartlam, Specialist
Mr. J. A. Ferri, Specialist
Mr. E. Renick, Specialist